

Interchangeable Bearings for Profile and Weight Trade Studies, Phase I

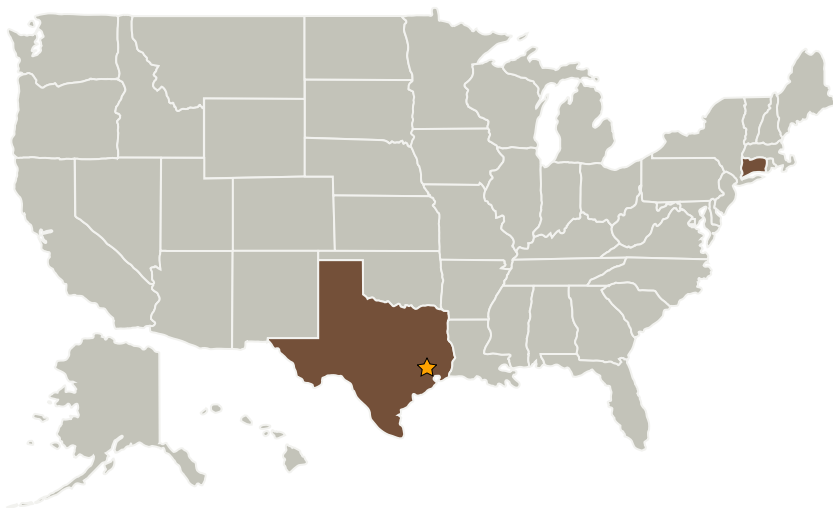
Completed Technology Project (2009 - 2009)



Project Introduction

Air-Lock, Incorporated is proposing to design fully sealed shoulder and arm bearings with interchangeable bearing housings. The interchangeable housings shall be utilized in trade studies to determine the optimal bearing profile and weight relative to the shoulder and arm position. It is assumed that the next generation of NASA pressure suits will require the crewmember to utilize their suit in both the pressurized and unpressurized mode. Historic, key design drivers have always been suited comfort in the unpressurized mode and suit mobility in the pressurized mode. As a minimum, bearings will be needed at the shoulder, bicep, and wrist to satisfy pressurized mobility requirements. To placate unpressurized comfort, the optimal bearing design shall be lightweight and low profile; often conflicting characteristics in bearing design. This SBIR proposal will provide NASA with a bearing design that facilitates quick trade studies to determine the optimal bearing profile and weight.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Air-Lock, Inc.	Supporting Organization	Industry	Milford, Connecticut



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Connecticut

Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.2 Extravehicular Activity Systems
 - └ TX06.2.1 Pressure Garment